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CITY OF MANCHESTER
Department of Public Works
Environmental Protection Division

November 2, 2015

Mr. Newton Tedder
USEPA – Region 1
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912

Subject: **City of Manchester - Review Comments on 2015 Draft New Hampshire Small MS4 General Permit**

Dear Mr. Tedder:

The City of Manchester (City) is pleased to submit comments on excerpts from the 2015 Draft New Hampshire Small MS4 General Permit. Our staff met with the New Hampshire Department of Environmental Services and EPA to discuss key permit requirements. In addition, a regional stormwater coalition that was formed in 2013 with legal counsel was reformed to assist with our 2015 draft permit comments. These coalition comments will be submitted under a separate cover letter. Lastly, we consulted with several engineering firms for their feedback on the draft permit requirements.

Below are general comments that pertain to the overall permit and the sections reissued for comment. Attached to this cover letter are 12 pages of specific comments to sections 2.11, 2.2, 2.3.6, Appendix F, and Appendix H.

General Comments

1. Insufficient Implementation Schedule

The City has a well-established history of stormwater environmental stewardship. We have had an Urban Ponds program for over a decade and have demonstrated water quality improvements through the implementation of several structural and non-structural stormwater best management practices (BMPs). Based on our experience, to implement the requirements of this draft permit in five years is unrealistic and cost prohibitive. The requirements of this permit more realistically will require about 20 years of sustained work. Within our comments we recommend that this be extended to a 20 year permit with the first five years focusing on data verification.

2. Data Verification Required

A significant portion of the water quality data that this permit is being based is dated, in some cases there are insufficient data points, and the sampling techniques used are unknown, Considering this program will cost hundreds of millions to implement, it is imperative that sound and accurate science be used to determine the appropriate mitigation measures. We have

partnered with DES in sampling programs in the past using clean sampling techniques governed by a formal QA/QC program. We propose that we continue this sampling partnership and focus the first five years of the permit on data verification. This will help ensure that appropriate, cost effective, and successful mitigation measures are implemented.

3. Interjurisdictional Issues and Responsibilities

This permits deals with watershed based issues. However, the permit, and its compliance responsibilities, is being issued to individual communities. Therefore, the community where the water bodies are located will be responsible for compliance despite not controlling the flows from neighboring communities that contribute to water quality impairments. There are ponds within the City that receive 70% of their flows from communities outside of Manchester. In addition, the New Hampshire Department of Transportation (NHDOT)'s highways are significant contributors to the City's pond water quality impairments. There is also atmospheric deposition which is a national problem and contributes to the City's water quality impairments. This permit should be restructured to address impairments on a watershed basis with all stakeholders contributing in a fair and equitable manner as opposed to individual communities being forced to assume the full implementation and financial responsibility.

4. Cost Prohibitive/Unfunded Mandate

The cost of the City's full compliance with this five-year permit is estimated to be over $700 million. For comparison, the City's annual operating budget is about $310 million. With so many competing interests for the City's limited funding, compliance with this draft permit is cost prohibitive.

This permit is an unfunded mandate as defined in Article 28-a of the State's Constitution, Bill of Rights, adopted on November 28, 1984 states, *"The state shall not mandate or assign any new expanded or modified programs or responsibilities to any political subdivision in such a way as to necessitate additional local expenditures by the political subdivision unless such programs or responsibilities are fully funded by the state or unless such programs or responsibilities are approved for funding by a vote of the local legislative body of the political subdivision."*

Sewer and water are specifically included in Section 541-A: 25 Unfunded State Mandates II of the Administrative Procedures Act State, *"Such programs also include, but are not limited to, functions such as police, fire and rescue, roads and bridges, solid waste, sewer and water, and construction and maintenance of buildings and other municipal facilities or other facilities or functions undertaken by a political subdivision."*

The draft MS4 permit has significant and costly long-term impacts to the City of Manchester. We look forward to working with EPA and NHDES in developing this permit as a useful tool to continue our partnership of environmental stewardship in a practical, reasonable, and cost effective manner.

Sincerely,

Frederick J. McNeill, P.E.
Chief Engineer

Cc: Kevin A. Sheppard, P.E. - City of Manchester
Timothy J. Clougherty - City of Manchester
Jeff Andrews, P.E. – NHDES

NH MS4 General Permit - Comments to Section 2

In Section 2.1.1 (d), the sentence after the URL reference, should state, "the permittee shall, as expeditiously as possible, but no later than 60 days of becoming aware of the situation, eliminate the condition causing or contributing to an exceedance of water quality standards, *unless permittee is subject to the schedule in Appendix F.* This assures the permittee there is a relaxation in the 60-day compliance deadline outlined in this section. The section 2.2.1 (b) further enforces the 60-day compliance period in the opening sentence and then states the satisfaction of the appropriate requirements of Appendix F. This is another reason that the additional language in 2.2.1 (d) is so important.

Section 2.2.1 (d) through (f) will be discussed in Appendix F comments.

Section 2.2.2, Discharge to Certain Water Quality Limited Waters without Approved TMDL states that, for the purpose of this permit, a 'water quality limited water body' is any water body that does not meet applicable water quality standards. There have been comments sent to the NHDES requesting the separation of the "Human Health Criteria" from the designation of the applicable quality standards. The Human Health Criteria are generally much lower than the acute and chronic limitations. The Human Health Criteria is based on members of the general population drinking two-liters of the associated water body's water for a 70 year period. This does not apply to any of the waters in Manchester other than Lake Massabesic.

It needs to be noted that the water quality standards do not include the Human Health Criteria
Standards as outlined in the NHDES criteria unless the water is used for drinking purposes (Lake Massabesic in Manchester).

Section 2.3.6 (a) (ii) requires the development of an ordinance or other regulatory mechanism within two (2) years of the effective date of the permit. In Appendix F, (3), it outlines the requirement to define the LPCP area. Even though this is phosphorus related, it does play into the development of ordinances. It takes a huge effort to develop ordinances, get them through committees then bring them before the City council for full approval. It would be relevant to understand the scope of the affected area and the treatment options to assure these are included in the ordinance. Once an initial ordinance is drafted, it is very difficult to go ahead and change the content on an as needed basis. This is evident in other EPA departments when there is a need to update IPP ordinances, update Inter-municipal agreements and other such city actions. This should be extended to five years.

Section 2.3.6(a) (ii) (b) is a burden to municipalities as it requires them to now monitor commercial and industrial developments for salt storage. This is something that the NHDES controls and the municipality should not be the watchdog for a state department due to funding issues. The municipalities are working under

as strict, if not stricter, budget restraints. The municipality agrees that these areas in the City need to be designed and maintained in an environmentally responsible manner.

The 2014/2015 winter was an ideal example of problems that can be associated with this requirement. Manchester had huge amounts of snow with no place to put it. There was a petition made to the State to relieve the requirement of snow dumping into the Merrimack River (this is allowed under state law if conditions warrant), but Manchester was denied this ability. There will be situations where direct untreated discharge will eventually reach receiving waters with winters of this magnitude regardless of the preventative measures taken. There should be a conditional statement that this is the requirement if the winter is normal (note: use the average NH snowfall amount in NH over an average winter season). Anything over this there is a temporary stay in this requirement as long as the City does everything possible to curtail snow runoff to the waterbodies from happening.

Section 2.3.6 (d) requires a report assessing local regulations to include zoning, construction codes, and at a minimum green roofs, infiltration practices, and water harvesting methods. This is an aggressive schedule, and may prove to be somewhat detrimental during periods of draught. The summer of 2015 demonstrated that New England can see these conditions. There were voluntary and mandatory water restrictions throughout the seacoast region over this past summer.

Rain and planter gardens, porous pavement rain barrels and cisterns all locally infiltrate water into small base load areas rather than spread it out over a wider location that would better benefit the aquifer recharge. Ares out west have banned these practices due to the capture of water that is highly needed for groundwater recharge. A study done by Douglas County, Colorado looked at rainwater harvesting. All water that falls as precipitation is assumed to ultimately contribute to flows in the stream and is deemed to be part and parcel of the water that existing water rights are entitled to use. Intercepting precipitation that would have otherwise migrated groundwater or surface water might interfere with the full allocation of existing water rights. The recommendation from the study would allow for precipitation capture and use with the understanding that the person who captures the water must augment this amount by maintain the amount, timing and location of historical runoff and deep percolation, which is the water supply for existing water rights. This requirement makes it infeasible to capture rain water. As climate change is an inevitable process that is beginning to demonstrate drought conditions in the east, it won't be long before water capture is outlawed, rendering at least rain barrels and cisterns obsolete.

The section "Description of Planned Structural Controls states that a priority ranking needs to be developed through the use of available screening and monitoring results. The requirement states that any monitoring plan be approved by the NHDES. This only happens after installation evaluation of non-structural BMPs during year six and seven. Item 12 is way too ambitious as 20% over 1 year, one year evaluation, another 20 percent at year

10 with two years of evaluation of both combined. Then another 40% reduction in year 13. This is going to be the hardest due to the fact that low-hanging fruit will be used in years eight and ten. This portion of the project will take at a minimum of five to ten years.

The EPA should add an appendix of what exactly would be expected with these tables for municipalities to view. This would include a baseline load to a pond, the actual load to the pond, the an example of non-structural BMPs, how EPA expects the evaluation to proceed, the preparation of structural BMPs, the installation schedule for structural BMPs, the review of these BMPs during year 14 evaluation and how to achieve full compliance with the final 30% of the most difficult BMPs with only one year to implement (year 15).

Calculate Baseline Phosphorus Load does not allow a municipality to account for phosphorus reductions resulting from implemented structural BMPs completed to date. Does this rule out the Stormtreat system at Crystal Lake and the baffle tanks? Doe is also disallow the three baffle tanks and vegetated repaired swale at Dorrs Pond. This section needs to be better explained.

Performance evaluation is done by calculated methods first. Monitoring and other means is only allowed if NHDES approved a monitoring plan and other assessment.

2013 Comments section –
The requirements of this permit more realistically will require about 20 years of sustained work based upon our 13 years' experience with our formal Urban Ponds Program. Within our comments we recommend that this be extended to a 20 year permit with the first five years focusing on data verification.

NH MS4 General Permit - Comments to Appendix F

Chloride TMDLs 1 (a) – page 3 of 23, (i.)The salt applied will not reflect the need of application. There are several variables that will make one day's application either slightly or greatly more or less than a corresponding day. The tracking system will need to take into account the temperature (around 32 F^0 means more freezing and therefore more salt application). When there are periods of lull in the storm where trips for reapplication may become necessary. The rate of snowfall, (was the snowstorm intense increasing the depth quickly requiring only one application of salt, or was the storm light, but throughout a 24 hour period) where there needed to be three or four applications.

There is always the question of public safety with salt application. Yes there are semi-adequate alternatives to salt application, but the most responsive and cost effective, and also the one that promotes the most public safety is salt application. Section 2.3.6 (e), second paragraph states that the permittee may consider public safety when evaluating potential retrofits for development and redevelopment. Even though this section pertains to

constructed BMPs, it should hold more weight in salt application, which is a non-structural BMP, where weather conditions are so variable.

As Manchester has evidenced with precipitation gages for CSO rainfall activity, it may rain (in the winter snow) heavy in one area of the City requiring more application than in another (no or little application required). The tracking system must have full integration with local weather conditions to correlate meaningful results and determine the true percentage reduction on salt dependent conditions.

Item (a) (ii) Planned activities are difficult to determine as they will always be weather dependent as outlined above.

Item (a) (iii) Estimation of total tonnage reduction is again very weather dependent. A sustained freezing rain with maybe 2" of accumulated snow may require ten times the salt application as compared to a one-foot storm that comes down heavy and quickly with only a minor application needed pre-storm event.

There needs to be an appendix in the final document to demonstrate how the UNH tracking system is to be specifically used with a print out of an actual weather event, and a qualifying statement to account for all of the weather variables.

In Section (b) (i) there is a requirement for municipalities to identify private parking lots that drain into the MS4 with 10 or more parking spaces. This is a burden to the municipality to do this initially. If a municipality would find high salt concentrated water body (like Stevens Pond in Manchester) then the municipality would look at the surrounding contribution to determine where the excess salt comes from (roads, parking lots, commercial establishments industry etc.). It probably will not be necessary to have this information initially as this would be considered by the licensed certified salt appliers and larger commercial lots sub-contract this work out.

Section (b) (ii) anticipates that the municipality will determine who the commercial salt users are and to **require** that they are certified under State program. As this is a state requirement (Env-Wq 2203) it should ultimately be a State responsibility to assure that the salt appliers are certified and not mandated to the local municipality. Env-Wq 2201.01 clearly states, "The purpose of these rules is to implement the voluntary salt applicator certification program established in established in RSA 489-C. This requirement makes it mandatory and is contrary to established RSA and Env-Wq.

Manchester continues to stand behind their 2013 comment pertaining to (b)(ii)that follows, *The community must also identify parking lots that are 10 spaces or greater that discharge to the MS4 and develop requirements that make sure that the salt applicators are trained and certified and that they provide the community with annual salt usage. Salt applicators can change from one season to another based on their price*

to treat the parking lots. In New Hampshire the Green SnoPro Certification Program was developed to help train and certify applicators across the state. These salt applicators also track their salt usage. The EPA should consider that this requirement is met through this state program and not pass this requirement down to the individual community.
Requirements for new and redeveloped properties must be established that will minimize salt usage, track salt usage, and report to the community their annual salt usage. This requirement can also be met through the Green SnoPro Certification Program. To also include the UNH road salt tracking program.

The same rationale as above for (b) (iii) development and redevelopment areas is that it is voluntary as outlined in RSA and Env-Wq.

II. Bacteria TMDLs Section 1(i) (1) outlines Public Education to dog owners at time of issuance of dog license. Manchester has been doing this since 2005 with unknown results. There needs to be an appendix outlining ways to measure this success. An example is Manchester sets up kiosks at all their ponds with information on types of fish, flora and fauna, map with pond water depth etc. This is also set up at the public beach at Crystal Lake.

In 2006, Manchester set up booths at Crystal Lake and Dorrs Pond to question users what was on the kiosk. As incentive water bottles were distributed to those who were willing to discuss what was on the kiosks. What was discovered is that some of the frequent users walked by the kiosks never reviewing the material. Others had scanned, but did not know of any of the information contained in the kiosk. A small portion seemed to know there was information about fish and maybe what type, but that was the extent of their knowledge. It was disheartening, but it demonstrated a realization that people who use the resource, may not necessarily care about what exotic vegetation, depth of the pond etc. about what they are using. All of them were aware of litter and the need to put trash in the barrels. None were aware of the "Do not feed the ducks" sighs that were posted in the vicinity.

There needs to be an EPA/NHDES study on what is effective and how to truly implement a Public Education Program, before requiring municipalities spend thousands of dollars on education that has not historically worked. There needs to be explicit examples of what to implement, how to present this information, determine psychological wording that will be implanted into the user etc. In short, it is almost a Public Service Commercial and municipalities have to be given direction on how best to present this information.

In Section II (A) (1) (2) it talks about development of an Illicit Discharge program for catchments. State program limitations for bacteria are 88 count for swimming areas and 126 count for other recreational areas. There is a limit of 1,000 count for non-recreational and swimming areas.

Manchester notes that many of the summer samples taken along the Merrimack River and analyzed here at the WWTP for e-coli show a higher value when there are fowl or warm blooded animals present. High numbers have been associated with geese and duck sightings alone with sightings of ground hogs in the area. There are 198 waterbodies declared impaired for coliform bacteria and there is the possibility that many of these are due to fowl or animal contamination.

The City spent a week in the Dorrs Pond area looking for a source of bacteria that measured 4,000 in a feeder brook to the Pond. After extensive removal of vegetation from the embankments in search of a discharge a small natural dam made out of rocks was evident in the stream. There were choke cherry bush overhand in this area and grosbeak birds visited this brush to eat berries. A sample was taken in the dammed are and upstream. The dammed area was high with the upstream area being almost clean. It demonstrates that fowl can add quite a bit of coliform contamination. This was also discovered in the Merrimack River when a family of ducks was habituating a corrugated drainage pipe and an area on the west side where cats were inhabiting an abandoned building and the outfall under the Queen City bridge as picking up this fecal contamination. The NHDES should consider raising the coliform limitation from 1,000 to 5,000 to account for this typical contamination.

III. Lake and Pond Phosphorus TMDLs - There are four ponds in Manchester with TMDLs, Dorrs, Nutt, Pine Island and Stevens Ponds. The pond TMDL was originally set at 15 ug/l for phosphorus. At some point after Manchester had done extensive work at Nutt Pond the decision was made by NHDES to lower the pond level to 12 ug/l to allow for a 20% safety factor. Many field personnel and scholars believe that this consistent limit is almost impossible to achieve.

As the ponds reside within a municipality, the option of whether or not the municipality wants to apply a safety factor should be left entirely up to that individual community and not the NHDES. A community may need to spend upwards of an extra million dollars to reach the 12 ug/l limit rather than the 15 ug/l when it is not necessary.

Also, one of the **Water Quality Goals** bullets (second bullet, *estimate the loading capacity, a sub bullet of the WQ Goal bullet*) does not take into account flush rates. Manchester has a low flush rate at Nutt Pond of about 10 turn overs a year. It is about one a week at Dorrs Pond and four times a week at Pine Island. These flush rates have a direct impact on peak phosphorus detention in the pond and should be considered when modeling the TMDL. A one size fits all 12 ug/l is not appropriate for these varying flush rates. Visually, it is obvious Nutt Pond is much more strained than Pine Island and yet both have the same stringent phosphorus criteria.

As stated in the 2013 comments and reiterated here, Manchester has serious concerns about using calculated data when the models can be far out of calibration. Those comments were,

Watershed Modeling Overview *- Manchester is outlining the assumptions made in both the CEI Watershed Restoration Plan and the AECOM TMDL to identify significant modeling differences within both approaches. Both models, in view of predictive conditions vs. actual field conditions are off by greater than 90%. The specifics of each model are viewed in detail and demonstrate that phosphorus is not always an accurate predictor of algal blooms. There are many other conditions that can contribute to algal blooms.*

The CEI Plan, page 3-1 under 3.1, Critical measurement states, "It is expected that the goals may take years to achieve and actual in-pond measurements can vary widely from year to year due to climatic factors, therefore, the overall average and trend is important to review." As the Nutt Pond Restoration Plan has been a focus of the City's for 13 years, and has yet to achieve WQ criteria, it would be unreasonable to expect full compliance with the currently issued MS4 permit in the five-year permit cycle. The experience with Nutt Pond demonstrates that even two five-year permit cycles would not have achieved compliance and this is the smallest pond within Manchester with a current TMDL.

*The CEI, Watershed Restoration Plan, is very similar to the AECOM TMDL for Nutt Pond (**Attachment 2**) in basic assumptions.*

Nutt Pond Watershed Restoration Plan

	Lake Area Acres	Lake Vol Gallons	Water Budget (gals/yr)	Watershed Acres	Gallons per Acre	Modeled TP Loading	Target TP Loading
AECOM	17.5	69,383,601	637,652,672	645	988,715	230.3 lbs	69.1 lbs
CEI	17.3	69,000,000	667,000,000	557	1,197,487	161.32 lbs	75 lbs

Note that the watershed acreage is different by 13.6% and the TP load is different by 30%. CEI used one model (Reckhow) and AECOM used an average of five models of which Reckhow was one and it had the lowest TP modeling predictive load of 28 ug/l (Kirchner-Dillon – 35 ug/l, Vollenweider – 39 ug/l, Larsen-Mercier – 32 ug/l, Jones-Bachmann – 34 ug/l and Reckhow – 28 ug/l). The calculated mass balance was 43 ug/l. It would appear that Reckhow is the most liberal of the group in predicting TP modeling.

The five AECOM empirical models have a predicted in-lake TP concentration for Nutt Pond between 28 and 39 ug/l which is a 28.2% variation. When compare the mass balance calculated amount of 43 ug/l that variation increase to 35%. That's a significance variation that can mean millions of dollars in the planning stage.

A section regarding TMDL development should state that if any model needs to be corrected by more than 30% to fit the actual calculations, this TMDL is ruled not applicable to the TMDL calculation process as it doesn't demonstrate strong science beyond any reasonable doubt.

In Section III, 1(ii) (b) there needs to be a subsection in the LPCP Components in #4. Calculate Baseline Phosphorus, Allowable Phosphorus Load and Phosphorus Reduction. A few words need to be included that this only pertains to jurisdiction within the regulated MS4. Compare that to the total allowable phosphorus loading and determine how much reduction needs to take place on the municipalities end.

In the future should the EPA determine how to enforce regulations in outside communities and their impact to the regulated MS4 waterbodies, then the municipality can proceed to recalculate their portion of the total load to that waterbody. The assumption is that the waterbody is located in the municipality therefore, the municipality has all the loading benefits until laws change to address outside contributions.

An example for Manchester would be Dorrs Pond has 100 lbs. of calculated phosphorus loading to the pond. The TMDL measures 300 lbs. of P contribution. There needs to be a reduction of 200 lbs. Say that 70% of the load is coming from Hooksett (210 lbs.). Manchester would be contributing 90 lbs. to its pond that can accept 100 lbs. of P. Manchester is in compliance with the 100 lb. limit.

Under Section 1(ii) (a) the final plan must be fully implemented no later than 15 years. Manchester has been working with Nutt Pond since 2000 (going on 16 years). There is still a gravel wetland to be installed over next spring and summer and the belief is that the 12 ug/l limit will still not be achieved. There have been ongoing projects each year with design, construction, evaluation etc. It is clear Nutt Pond, which has received the bulk of Manchester's attention and funding, could not be completed in the 15 year time frame allotted and it is the smallest volume TMDL pond in Manchester. A small community like Kingston with three TMDLs may take more than 40 years to implement full compliance consistently at 12 ug/l.

If you look at the performance table milestones it allows 7 years to evaluate performance evaluation of all nonstructural controls. Item 12 is requiring implementation of 20% of structural controls required to achieve this year's phosphorus load reduction. This is one year to complete what has been ongoing in Manchester for at least 10. When you consider the time to design, bid and build a facility it typically takes three years. It is economically unfeasible and also does not allow sufficient time to demonstrate the effectiveness of each individual structural BMP. The 20%, 40% and 70% reduction schedules should all be increased by at least three years. The final 30% reduction is going to be the hardest as this is going to be the hardest amount to remove as the low-hanging-fruit will all be taken in the first 40% reduction. This component may take 10 years in and of itself and be the most cost intensive. Structural controls need to be put in place sequentially, measured and evaluated to determine the effectiveness of each. This table needs significant time increases in regards to years to complete.

The LPCP components and milestones, outlined in the table, are the same for all water bodies throughout the State of New Hampshire regardless of physical location. Some waterbodies are easily accessible for the

implementation of structural BMPs (Nutt Pond in Manchester for instance). Some are a little tougher to get at and have moderate difficulty (Dorrs Pond and Stevens Pond in Manchester only have one or two side access). Others are very difficult to get at due to remoteness and general out of urban area location. This would be the case for Pine Island Pond with one area of easy access. There should be a difficulty factor put into the table for implementation of the non-structural and structural BMPs. Adjust the schedule as outlined above for easy accessibility to the waterbody. Give a multiplication factor of say 1.33 for construction time if waterbody is moderately difficult to access the waterbody. It would also make sense to use a multiplication factor of 1.66 to 1.75 if it is very difficult to access the waterbody.

This same line of thought would go into the % reduction load to the pond. In Manchester Stevens Pond has a 50% reduction where Pine Island Pond has a 73% reduction. Pine Island should be given proportionately more time for construction as there is 23% more phosphorus reduction needed. With this additional reduction and the fact that this pond is remote with difficult access, it would reasonably take over two times as long to complete a compliance schedule as compared to Stevens Pond. These factors have to be considered within any issued permit to allow for continued success in this program.

The performance evaluation section is somewhat confusing and we will ask for an example at the roll out meeting. If a pond is only partially in a regulated community (i.e. Dorrs pond is located in Manchester) has an annual loading rate of 300 lbs. of P and the calculated loading should be 100 lbs. of P. There are 200 lbs. of P that must be reduced. If the drainage area lays 30% in Manchester and 70% in Hooksett does Manchester only have to deal with 30% of the loading or 60 lbs. of P to be in compliance? Another issue comes in with Stevens Pond. The drainage is almost entirely within the Manchester land boundary, but the roads that drain into that pond are about 20% Manchester maintained roads and 80% State Highway (Interstate 93). Is Manchester 100% responsible to meet the compliance criteria in this case, or do they fall under the same conditions as Dorrs Pond with the Town of Hooksett and only be responsible for the salt the City adds to Stevens Pond.

In **Section C, Description of LPCP Components** under Scope of the LCP the verbiage is somewhat vague and confusing. Item 1 talks about the drainage area within the jurisdiction of the permittee. Item 2 states that same thing. The section encourages the implementation of measures outside of the regulated area. However, in the last sentence it states "structural and non-structural controls implemented outside of the MS4 regulated area may not be counted towards the meeting of the Allowable Phosphorus Load for the purpose of permit compliance." This makes no sense.

Section C, Description of Planned non-structural Controls outlines that there must be a priority ranking developed through the use of available screening and monitoring results collected during the permit term either by the permittee or another entity. Section 3 on page 21 indicates that phosphorus tracking must be done by calculated means. If a municipality chooses to use monitoring, their plan must be approved by the NHDES in order to evaluate the effectiveness of the LPCP, or other work the permittee has conducted. This would

hamper the program effectiveness determinations in the early stages. Yet this section describes that "All phosphorus reduction from structural BMPs shall be calculated consistent with Attachment 3 to Appendix F." Either or language should be used here.

Implementation schedule section states that all non-structural BMPs shall be fully implemented within six years of the permit effective date. It also states that "The permittee shall within four years of the effective date of the permit have a schedule for completion of structural BMP retrofits consistent with the reduction requirements in Table F-3. Complete written LPCP is 5 years. The table schedule only requires structural BMPs to begin in year eight.

NH MS4 General Permit - Comments to Appendix H

Appendix H – To demonstrate compliance a municipality must over the course of 2 to 3 years take 30, flow-weighted composite samples. How do you flow weight a sample in a pond or small stream without a flume and some type of flow meter? If samples are grab every hour how do you determine flow in a channel? A timed composite on a non-rain day should be good enough. This standard should be the same that is used to list water as impaired. This should follow the NHDES CALM.

In Section II (1) (c)) (ii) requires the submission of a listing of planned structural BMPs with the 5-year report and to install a demonstration project in year 6. This should not be necessary as with Appendix F section III(c)) a permittee is allowed to calculate the baseline P load through calculated methodology as outlined in Attachment 1. This is also outlined in Appendix F, attachment 3 and should have a time frame like the phosphorus table to be done in year 10.

Section IV, 2 should not include private facilities as outlined in the comment section under phosphorus.

Section IV 4) (b) requires the tracking of private parking spaces and that the municipality assure that commercial salt applicators report their salt usage. The response would be the same as under the chloride section of phosphorus.

Section IV 5) requiring 30 flow-weighted averages is a proposal for a one-size-fits all criteria. Nutrients are different than bacteria. Metals are different than chloride and oil & grease. It should be sufficient to sample nutrients over a growing season (once per month during June, July August and September) if the concentrations are consistently less than 90% of the WQ parameter, there is a strong indication that the WQ limit is being attained. In a case like this, if the EPA insists on two to three growing seasons, then the requirements under the stormwater program should be stayed until the next growing season and the next round of samples. If these also are in range then that should be enough to determine that the waterbody has attained WQ certification.

Bacteria are always caused by some type of intrusion. Whether it is from a cross-connection, fowl, animals or pets it is always from an outside source. Bacteria are most harmful during the swimming/recreation season. If a waterbody meets a season WQ limit for bacteria (one sample each month from May through September – five samples) then the waterbody should be assumed to meet WQ attainment.

Oil & Grease (hydrocarbons) are generally rare unless boaters leak gas, people bathe, septic haulers illegally dump or cars change their oil and dump the waste oil in catch basins. This is a tough parameter to regulate. Is the waterbody considered impaired because O&G was found at the entrance of one inlet, but the rest of the waterbody is clear? This is something that must be determined in the final permit issuance. Is there a percentage of pollution (5% of the waterbody), or one hot spot. This is something that can be proven out with additional testing in the affected area. A sample a week for a month should prove or disprove WQ attainment. The need for 2 to 3 years is excessive.

Metals are a whole other issue. Clean sampling has proven that metals content can be reduced consistently between 50% and 80% of the samples. If the municipality is willing to undergo clean sampling and can prove that the background of the waterbody is attaining WQ standards then this should be sufficient to determine that the waterbody is attaining WQ. Four consecutive days of samples on one week during mid-summer and four consecutive days of samples on one week during late summer should be sufficient to demonstrate the waterbody is meeting WQ criteria. It must also be noted that any future sampling from outside groups must be at least as stringent as the municipalities sampling to have a sound scientific comparison. If outside agencies (watershed groups, environmental groups, the NHDES or the EPA) should find this too difficult to complete, then they must provide the municipality with a two-week notice so comparable samples can be taken at the same time. The municipality will have time to prepare acid-washed, double-bagged clean containers and prepare for the sampling event. The municipality will join the other sampler and each will take their sample. Whatever the % difference that is measured in this sampling event (say the watershed group obtains a sample with 12 ug/l of copper and the municipality obtains a concentration of 3 ug/l copper) then future outside samples are reduced by 75% to account for contamination contribution due to technique and sampler protocol.

Basis for Modification, the second paragraph outlines all the constituents believed to be contained in stormwater runoff. The assumption is that if sufficient data is available for any single urban stormwater discharge, the average concentrations of bacteria/pathogens, nutrients, chloride, sediments, zinc (metals) and oil and grease (hydrocarbons will likely be present. This is a rather huge assumption that if sufficient data for any single urban stormwater discharge it can be assumed that all of the above is present.

Manchester's efforts in 'Clean Sampling' has demonstrated that metals are highly over estimated due to a sampler's contribution and technique application. The Wisconsin DEQ demonstrated that field filtered chlorophyll-samples were almost always lower than lab filtered samples. This is the cause and effect from

excess nutrients. Every sample that is taken must be done so under an approved QAPP and in context with the NHDES CALM. Poorly taken samples with no QAPP provide poor scientific results and can cost the municipality hundreds of thousands of dollars in unnecessary treatment options. A reasonable comparison and sound scientific approach is outlined in Section IV 5) above.

END OF COMMENTS